Concept for the Creation of One-Time-Use Operating Environments for Enhanced Security

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Simon Edwards
Research Acceleration Initiative

Introduction

The ability of malicious code to influence the internals of systems meaningfully depends upon a programmer's knowledge of the code being used. Most major operating systems rely upon the same basic building blocks of code and similar basic principles. This makes it comparatively easy for malicious entities to write code which may be executed within those environments.

Abstract

Artificial Intelligence's ability to create data outputs which conform to basic, pre-ordained outlines (Generative Adversarial Network-generated images, for example) may recommend it for the automated creation of complex operating environments which, while supporting needed functions, could be varied infinitely much as the features of a human face (even an artificial one) can be varied infinitely.

Specific functions of an operating system which are set as must-have requirements could be enabled through a brute-forcing process a la "a million monkeys at a million typewriters" until code could be successfully executed. Once it passes a self-test and functions, that module is complete and the A.I. can move on to the next module. Eventually, a whole operating environment could be created in this manner with only the GUI being inspired by an extant OS.

This can be useful for enhancing security and also for facilitating the sanitation of compromised systems as these unique systems could be used as a laundromat enabling files from compromised systems be be routed through the alien-like operating environment where viruses cannot exist. From the unique, artificially-generated operating environment, files from the compromised systems can be exported to a known clean system and the impacted system can be reinitialized.

Conclusion

As Artificial Intelligence is already being used for automated threat detection and automated offensive cyber operations, the one-time-use operating environment concept is a natural next step for computer science.